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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/730,061 | 12/09/2003 | Takeo Tanaami | 032019 | 2970 |
| 38834 7590 06/04/2007 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036 | | | EXAMINER BEISNER, WILLIAM H | |
| | | | ART UNIT 1744 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/730,061

Applicant(s)

TANAAMI ET AL.

Examiner

William H. Beisner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006 and 08 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the claims related to species i), claims 7 and 8-14/7, in the reply filed on 3/8/2007 is acknowledged.
2. Claims 1-4 and 15-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/8/2007.

Information Disclosure Statement

3. The information disclosure statement filed November 13, 2006 has been considered and made of record.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 7 and 8-14/7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konrad (US 5,789,167) in view of Wen-Teng et al.(US 2001/0005718).

The reference of Konrad discloses hybridization equipment (100) including a biochip (110) including fixed biopolymers (140); electrodes (120 and 130) which are both capable of being rendered positive or negative and which generate an electric field along the surface of the biochip (110) (See column 12, lines 42-53). The reference also discloses the use of a structure for generating a magnetic field over the surface of the biochip (110) (See column 16, lines 46-67).

If it is determined that the disclosed magnetic field generating device is used as an alternative to the electric field generating device, it would have been obvious to provide a single device with both types of field generating devices for the known and expected result of allowing the type of field to be selected when used.

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With respect to claim 7, while the reference discloses the use of a pair of electrodes to generate an electric field for manipulation of the biopolymers, the reference does not disclose that the electrodes are “bow-shaped”.

The reference of Wen-Teng et al. discloses that the use of straight or curved electrodes is known in the art of hybridization (See paragraphs [0040] and [0053]).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide curved or “bow-shaped” electrodes in the device of the primary reference for the known and expected result of providing an alternative means recognized in the art to achieve the same result, manipulation of the biopolymers using an electric field generated between a pair of electrodes.

With respect to claim 8, the devices for generating the electric field and/or magnetic field are structurally capable of changing the direction of the generated fields.

With respect to claim 9, the electrodes (120 and 130) are attached to the biochip (110).

With respect to claims 10 and 11, the magnetic field generated would inherently have to be generated using a permanent magnet or electromagnet.

With respect to claim 12, the power supply for the electrodes would have to be either a DC or AC power supply. If not, the electric field would not be able to be generated.

With respect to claim 13, the fluid can be a liquid or a gel.

With respect to claim 14, the substrate or biochip is formed with a “plate” (110).

8. Claims 7 and 8-14/7 are rejected under 35 U.S.C. 103(a) as being unpatentable over . Chen et al.(US 2003/0087292) in view of Wen-Teng et al.(US 2001/0005718).

The reference of Chen et al. discloses hybridization equipment (See Figure 34) including a biochip including fixed biopolymers; electrodes which are both capable of being rendered positive or negative and which generate an electric field along the surface of the biochip (See paragraph [0190]). The reference also discloses the use of a structure for generating a magnetic field over the surface of the biochip (See Figure 34 and paragraph [0190]).

With respect to claim 7, while the reference discloses the use of a pair of electrodes to generate an electric field for manipulation of the biopolymers, the reference does not disclose that the electrodes are “bow-shaped”.

The reference of Wen-Teng et al. discloses that the use of straight or curved electrodes is known in the art of hybridization (See paragraphs [0040] and [0053]).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide curved or “bow-shaped” electrodes in the device of the primary reference for the known and expected result of providing an alternative means recognized in the art to achieve the same result, manipulation of the biopolymers using an electric field generated between a pair of electrodes.

With respect to claim 8, the devices for generating the electric field and/or magnetic field are structurally capable of changing the direction of the generated fields.

With respect to claim 9, the electrodes are attached to the biochip.

With respect to claims 10 and 11, the magnetic field generated would inherently have to be generated using a permanent magnet or electromagnet.

With respect to claim 12, the power supply for the electrodes would have to be either a DC or AC power supply. If not, the electric field would not be able to be generated.

With respect to claim 13, the fluid can be a liquid or a gel.

With respect to claim 14, the substrate or biochip is formed with a "plate".

Response to Arguments

9. With respect to the rejection of Claims 5-14 under 35 U.S.C. 102(b) as being anticipated by Konrad (US 5,789,167), Applicants argue (See pages 9-10 of the response filed 11/13/2006) that the rejection is not proper because the reference of Konrad does not employ an electric field and magnetic field simultaneously.

In response, the Examiner maintains that the reference discloses a device that can include either an electric field or magnetic field and as a result, one of ordinary skill in the art would have recognized that a device that generates both types of fields would be obvious such that a single device would be capable of providing either type of known field. Note statements of intended use carry no patentable weight in apparatus-type claims. Additionally, new grounds of rejection have been made over the combination of the references of Konrad and Wen-Teng et al. to address newly recited claim limitations.

10. With respect to the rejection of Claims 5-14 under 35 U.S.C. 102(e) as being anticipated by Chen et al.(US 2003/0087292), Applicants argue (See pages 10-11 of the response filed 11/13/2006) that the rejection has been overcome by the amendments to the claims, including the claim limitation of claim 7 that the electrodes are "bow-shaped".

In response, the rejection of the claims under 35 U.S.C. 102(e) as being anticipated by Chen et al.(US 2003/0087292) has withdrawn and new grounds of rejection have been made

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over the combination of the references of Chen et al. and Wen-Teng et al. to address newly recited claim limitations.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Beisner whose telephone number is 571-272-1269. The examiner can normally be reached on Tues. to Fri. and alt. Mon. from 6:15am to 3:45pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys J. Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William H. Beisner
Primary Examiner
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WHB